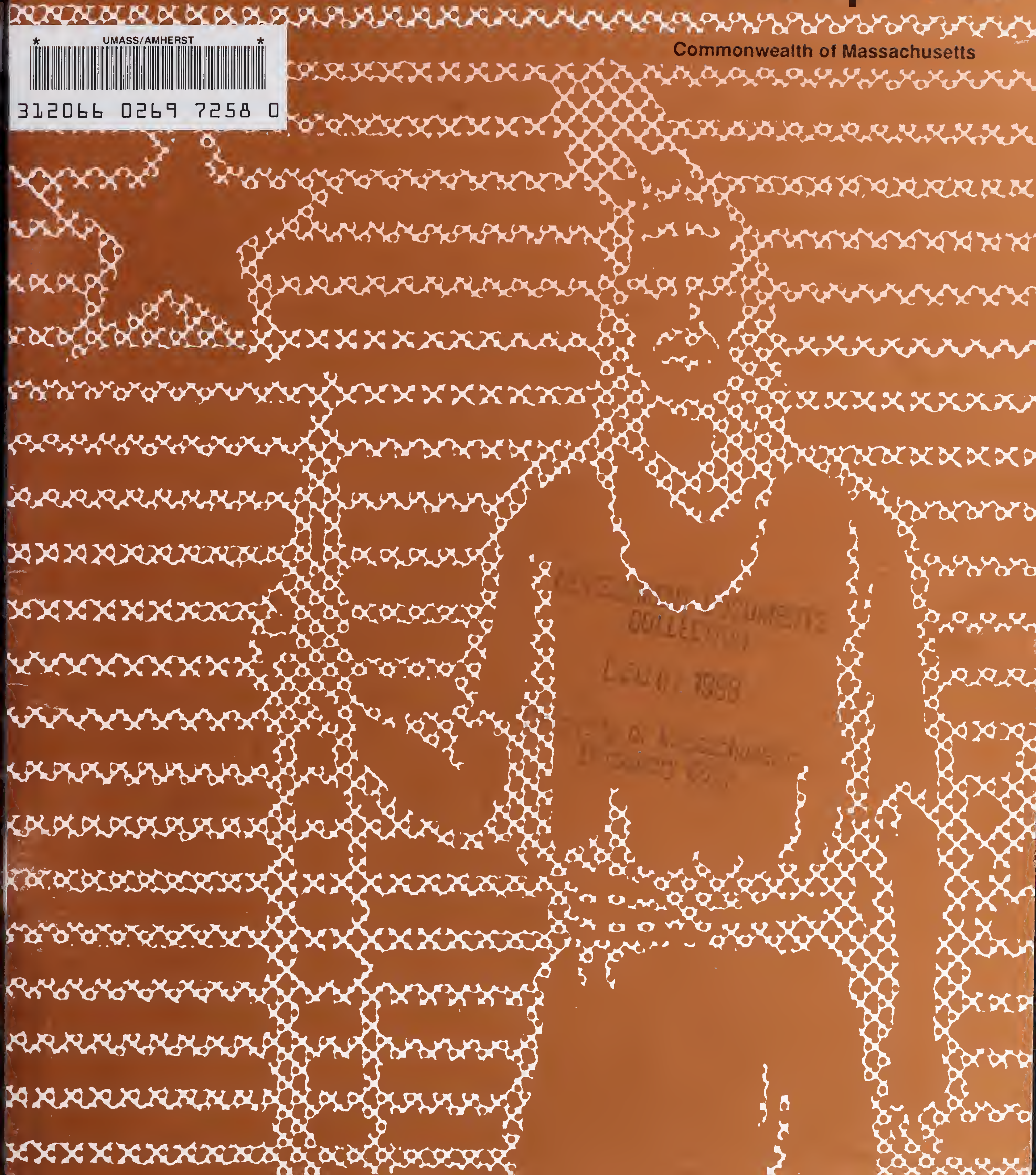
MASS. AF32.2: P75

Policies and Guidelines for Microcomputers

UMASS/AMHERST
312066 0269 7258 0

Commonwealth of Massachusetts



GOVERNMENT DOCUMENTS
COLLECTION
[illegible] 1988
University of Massachusetts
Depository Copy

Digitized by the Internet Archive
in 2012 with funding from
Boston Library Consortium Member Libraries

http://archive.org/details/policiesguidelin00mass

Policies and Guidelines for Microcomputers

Published jointly by

The Governor's Industry Advisory Committee on
Information Processing
and
The Office of Management Information Systems

April 1988

Publication #15479-25-1000-5-88-CR / Approved by Ric Murphy, State Purchasing Agent
Text printed by Central Reproduction

83 / 460

Governor's Industry Advisory Committee on Information Processing

Charles Zraket, President and CEO, The MITRE Corporation, Chairman
Michael Brown, Senior Vice President, The New England
James I. Cash, Jr., Associate Professor, Graduate School of Business Administration, Harvard University
Marvin F. Cook, Associate Vice President, Boston University
Melvyn P. Galin, The MITRE Corporation, Executive Secretary
James G. Herman, Independent Consultant, formerly Director of Telecommunications Consulting, BBN Communications Corporation
Norman L. Rasmussen, President, Teleprocessing, Inc.
John F. Rockart, Director, Center for Information Systems Research, Massachusetts Institute of Technology
Patricia B. Seybold, President and CEO, Patricia Seybold's Office Group, Inc.

Commonwealth Policy Steering Committee on Information Processing

Peter Agnes, Assistant Secretary, Executive Office of Public Safety
Daniel Collins, Deputy Commissioner for Information Systems, Department of Revenue
Solomon Kenea, formerly Director of Systems, Executive Office of Human Services
David Lewis, ALARS Project Manager, Registry of Motor Vehicles
Kevin Malley, Assistant Budget Director, Budget Bureau
Gary Patenaude, Deputy Commissioner for Systems, Department of Public Welfare
Joan Shea, Deputy Comptroller, Office of the Comptroller
Rick Taupier, Assistant Secretary, Executive Office of Environmental Affairs
Victor Valaitis, Director of Data Processing, Division of Employment Security
Hedy Veith, Deputy Commissioner, Department of Personnel Administration
Ann von der Lippe, Director, Regents' Computer Network
Patricia Wada, Director, Bureau for Systems Policy and Planning

PC Management Subcommittee

Kathryn Bayliss, Department of Revenue
Queen Booker, Budget Bureau
Solomon Kenea, formerly of Executive Office of Human Services
Allan King, Bureau for Systems Policy and Planning
Joyce Rubino, formerly of Bureau of Systems Services
Patricia B. Seybold, Patricia Seybold's Office Group, Inc.

Table of Contents

Special Preface for Managers 1

General Introduction 4

Policies

Software Copyright Compliance 5
Security for Microcomputer Data and Equipment 7
Microcomputer Software Development 10

Guidelines

Development of Microcomputer Training Policy 12
Development of Microcomputer Maintenance Policy 18

Special Preface for Managers

The point of this special preface is to set out for managers a number of compelling reasons why they ought to consider most seriously the matters dealt with in the following policies and guidelines. Having done that, we suggest a plan for dealing with the increasingly important and serious issues addressed in the following pages.

The Microcomputer Is Here to Stay

In the midst of managing whatever it is you manage, you may not have entirely appreciated the steadily growing number of microcomputers in your organization. Sometimes called "desk-top computers" or "personal computers (PCs)," these small "micro" computers provide easy access to relatively inexpensive computing power. For the most part, they are currently used for word processing and spreadsheeting duties. In some cases you will find that these small computers are used for standalone databases containing some information relevant to your organization's business and mission. Most recently these standalone machines have begun to be connected to each other through Local Area Networks (LANs). As they communicate with each other they can offer electronic mail and other messaging functions. They hold the promise of supporting organization-wide databases in their LAN configuration.

Microcomputers Foster End User Computing

Microcomputers are a tool on a person's desk. Like the conventional typewriter and the telephone, they look harmless enough. We all believe that they make the operator/employee's life easier. We also believe that they make the employee more productive. These would be suitable criteria for evaluating a simple tool. Microcomputers are not simple tools, however.

What microcomputers really do is to bring the power of computing to the desk-top environment. The office rather than the computer center becomes the focus of your organization's day-to-day data processing. You may still require data from large databases maintained at your data center on expensive "mainframes," but increasingly all you will require is the data itself, not the manipulation of that data into a form such that you can use it for decision making. That manipulating and reformatting is already beginning to be done in your office, on your microcomputers, by your employees. And as new tools become available for your employees to use on their microcomputers, you will increasingly see innovative and significant microcomputer solutions being created by your employees to assist your organization's business. That is known as end user computing. It is the principal data processing challenge which organizations such as yours face in the immediate future. In fact, industry figures suggest that by 1990, 80% of all software development will be done by end users. Your employees will be those end users. The software they will be developing will have an impact on your organization and how it accomplishes its mission, for better or worse.

You Need a PLAN to Manage End User Computing

It is becoming clear that end user computing must be consciously managed. It cannot be left alone to grow on its own. Its presence and actions are much too critical to your organization to be left unmanaged. Indeed, the greatest danger is that, unmanaged, end user computing will become a disorganized, undirected morass into which money, time, and employees will sink.

A plan is required to manage end user computing. This plan will have several component parts. It needs to address the following issues:

security of both equipment and information,
maintenance of both hardware and software,
compliance with appropriate copyright laws,
employee training requirements, and
quality control over the output work product.

The following policies and guidelines give you a framework to use with these issues. The documents are intended to foster discussion and help make sure that you address the central issues involved in each area of concern. By and large they raise planning issues which you, as manager, need to address. You will find these documents to be especially suitable resources for you to use with your planning committee(s).

While the issues raised in these documents relate specifically to microcomputing, you need be aware also of the requirements for staffing which are associated with end user computing. You will need to provide adequate systems management personnel resources for your organization as the promise of end user computing and software development becomes a reality in your organization.

General Introduction

The introduction of microcomputers (PCs) to the office environment offers managers an array of desk-top computing possibilities that have in the past been performed by data centers, if at all. Data analysis and data processing have become increasingly decentralized as more and more managers purchase equipment and software to support their staffs in performing a variety of tasks and applications.

The introduction of these systems also presents managers with an array of issues they must address to ensure that microcomputers are used efficiently and effectively. This guide identifies the major issues involved and presents managers with options to evaluate as they introduce or expand end user computing in their offices.

A subcommittee of the Commonwealth Policy Steering Committee on Information Processing prepared this guide based on the microcomputer management issues that members of the Committee have regularly encountered. Both the umbrella committee and its subcommittee include data processing professionals from several Commonwealth agencies.

The guide is intended to provide technical support and assistance to managers. Its purpose is not to establish rigid rules to which managers or microcomputer users must adhere. To do so would be inconsistent with the decentralized nature of end user computing.

Microcomputers have given managers independent and autonomous data processing capacity. Despite this autonomy, a common framework for managing and maintaining hardware, software, and the resulting applications will go a long way toward ensuring effective operation of microcomputers. We therefore encourage readers to review this guide; to consider carefully the issues raised here related to copyright compliance, security, software development, training, and maintenance; and to develop procedures tailored to their own needs and demands.

ADP POLICY MEMORANDUM
OFFICE OF MANAGEMENT INFORMATION SYSTEMS

88-2

April 1988

Subject: Software Copyright Compliance

Purpose:

To educate software users in their responsibilities for complying with copyright laws and in the procedures the Commonwealth has introduced to enforce compliance with these laws.

Policy:

A Commonwealth agency using either standalone or networked personal computers must hold a license for all software being used on the computer(s) or the computer network.

The unauthorized duplication of software or the use of software whose duplication was not authorized violates U.S. copyright laws, and is a federal offense. Civil damages for unauthorized copying can exceed $50,000 and criminal penalties include fines and/or imprisonment.

Procedures:

The responsibility for enforcing copyright laws falls on managers. The Bureau for Systems Policy and Planning will withhold approval of AF-29 requests from any agency using an unauthorized copy of software until the agency complies with the copyright laws. In addition, BSPP will expect all CPU purchases to include application software or otherwise to account for the source of such software.

To ensure compliance with the laws, managers should consider implementing the following practices:

> Publicize user responsibilities and the penalties for noncompliance in employee orientations, newsletters, and PC training classes.

Specify an employee's obligation to comply with these laws as a condition of employment.

Reduce employee incentives to copy software by budgeting adequate funds for software procurement.

Where possible, enter into multiple-copy and site-license agreements with software vendors when procuring high-demand software packages.

Waivers: None

Effective Date: April 1988

ADP POLICY MEMORANDUM
OFFICE OF MANAGEMENT INFORMATION SYSTEMS

88-3

April 1988

Subject: **Security for Microcomputer Data and Equipment**

Purpose:

To educate microcomputer users and their managers in their responsibilities for protecting the Commonwealth's equipment, software programs, and stored information from accidental loss, unauthorized use, and theft.

Policy:

Because of the tremendous improvements in productivity and work quality that microcomputers make possible, the Commonwealth has a significant investment in microcomputer equipment, in packaged software, and — through its microcomputer users — in information stored on microcomputers. When users and managers pay insufficient attention to computer security, that investment is at risk.

It is the responsibility of microcomputer users and their managers to develop and to implement office procedures that promote computer security. Such procedures should preserve data from unintentional or malicious destruction, minimize equipment theft or loss, and protect the confidentiality of sensitive information.

The procedures developed should reflect the Commonwealth's interest in preserving the privacy of data as well as its security. Privacy goes beyond security in frequently requiring a person's right-to-know in addition to his or her ability-to-access sensitive data.

Procedures:

A security plan must be developed in each agency which results in the development of specific security procedures covering microcomputer data and equipment. In addition, personnel must be identified in each agency who are charged with security responsibility.

Depending upon the microcomputer applications involved, the skill of the users, the number of users per microcomputer, and the physical environment, the specific security procedures required will differ among agencies. Although these procedures will vary, managers and microcomputer users should consider implementing the practices which follow.

> Locate systems in areas where access is limited or where access can easily be supervised to prevent both unauthorized use of microcomputers and the disclosure of sensitive information to inappropriate parties. When it is not possible to locate microcomputers in a secure area, load confidential data onto a floppy disk for storage in a locked file cabinet.
>
> Assign passwords to users where it is possible to limit access to stored information.
>
> Make diligent efforts to prevent the theft of equipment and software. These include locking unattended offices that house microcomputer equipment.
>
> Train users in the proper handling and storage of data to protect the information stored on diskettes from being lost through damage to the diskette.
>
> Establish a filing system for directories containing microcomputer data. In the absence of a clear and logical directory system, much time can be wasted in retrieving a file or editing an old version of a document by mistake.
>
> Ensure that computer security issues are addressed both formally and informally in all microcomputer training programs.
>
> Develop a set of prudent and realistic backup procedures. (Backup is the process of making a duplicate copy of electronic files or documents so that if the original file is damaged, the backup copy can replace it.) In the absence of a backup, countless hours of employee time will be consumed in rekeying lost material. Often the data is permanently lost.

Backup procedures should address the following issues:

type of applications requiring backup,
frequency of backup (may vary by application),
responsibility for backup,
labelling and locating backup copies, and
education and enforcement of procedures.

Waivers: None
Effective Date: April 1988

ADP POLICY MEMORANDUM
OFFICE OF MANAGEMENT INFORMATION SYSTEMS

88-4

April 1988

Subject: **Microcomputer Software Development**

Purpose:

To educate managers in their responsibilities for identifying and managing microcomputer software development projects within their area of responsibility.

Policy:

The manager of persons within the Commonwealth using microcomputers or other small systems is responsible for the software products and applications which are developed on such systems.

Most people who manage offices where microcomputers or other small systems are used do not view themselves as software development managers. However, the use of microcomputers often results in the development of specialized software for specific business applications. Therefore, the manager of a work group which uses Lotus 1-2-3, dBase III, or any of the many other software packages is managing software development. Each manager must be aware of what is expected of him or her in fulfilling software management responsibilities. To that end, each such manager should consider implementing the practices and procedures that follow.

1. Identify Software Development in Process

Maintain a log or record of all software under development which may affect the business of the organization.

The manager should determine when a project is significant enough, and has a significant likelihood of coming to fruition, that it should be included in the log.

The log should contain the name(s) of the person(s) developing the software, the intended scope of the project, the beginning date, and data so that the status of the development project may be determined easily.

2. Monitor the Development Process

Make certain the developer maintains a record of all development work done, documenting the stages of the software's evolution. This should include both diskette and paper copies of the software. Before accepting software for regular business use, you must:

A) Require Appropriate Documentation

Make sure that there is a written manual detailing the process for using the software. This need not be lengthy, but must explain the environment for which the software was written, the problem(s) it addresses, the solution(s) it provides, and finally how to use the software in terms that someone not associated with its development can understand.

B) Make a Master/Backup Copy of Software and Documentation

Make sure that there is a diskette copy of the software, a print-out of the spreadsheet, code, etc., and a copy of the manual stored with the manager for safekeeping.

3. Perform Acceptance Testing

Assure that the software developed does, in fact, perform correctly the tasks it claims to perform, and that it is reliable for use in the business environment specified.

4. Maintain a Catalog of Software Developed

Finally, maintain an ongoing catalog of software developed. This catalog will function as the basis for noting and controlling any future modifications or enhancements in the developed software.

Waivers: None
Effective Date: April 1988

Guidelines for the Development of Microcomputer Training Policy

General

Training is essential for the effective and efficient use of microcomputers in the work place. An effective training program will increase employee productivity by reducing the employee's learning time, minimizing employee frustration, and assisting in the development of proper microcomputer habits.

Managers are responsible for ensuring that employees have the knowledge and skills necessary to use the available microcumputers effectively. Management must plan for training time and budget for its cost.

Managers should also receive a formal orientation in the use of microcomputers so that they can evaluate staff recommendations effectively and assist their employees in planning for and implementing microcomputer-based applications within their area of responsibility.

Training Resources

Numerous microcomputer training resources are available ranging from formal, professional classroom instruction to unstructured, self-taught tutorials.

> Commonwealth departments often have internal data processing or training units that conduct in-house training and/or coordinate data processing training needs with outside sources. Check with your department's data processing and training units.
>
> Product vendors often offer training on their particular products as part of the purchase agreement. Speak to the vendor during the procurement process.

There is an abundance of training vendors throughout Massachusetts, offering an extensive range of microcomputer training workshops and packages. Look at the trade journals and mailings for these offerings.

Local colleges and universities, often in conjunction with a training vendor, offer seminars and courses. Contact them directly.

Additional training resources follow:

Association of Data Processing Trainers (ADAPT)

ADAPT is a volunteer organization comprised of representatives from Commonwealth departments, the private sector, and training vendors. Members meet monthly from September to June to discuss training issues and share resources and ideas. A consortium course schedule is available for members and courses are usually offered at a discount to ADAPT members.

Contact:
OMIS Bureau of Training
Room 1601
One Ashburton Place
Boston, MA 02108
(617) 973-0925

BOT will be moving during
the summer of 1988 to:

16 North Street
Boston, MA 02109

Boston Computer Society

The Boston Computer Society (BCS) offers a wide variety of microcomputer training and support. Membership in the BCS is not mandatory for participation in many of the seminars. BCS clinics and seminars offer courses such as Lotus 1-2-3, Desk-top Communications, and Beginning DOS I Clinic. Costs start at $10. The BCS Resource Center is open on selected evenings and Saturdays for members to experiment on their own with hardware and software. Five week-long courses are also available during the summer months.

Contact:
Boston Computer Society
One Center Plaza
Boston, MA 02108
(617) 367-8080

Commonwealth of Massachusetts
Department of Personnel Administration

The Bureau of Human Resource Development provides centralized training and development for all Commonwealth employees. Courses include an Introduction to the Microcomputer, Introductory/Advanced dBase III, and Introductory/Advanced Lotus 1-2-3. Fees for microcomputer training courses range from $50 to $225. Some of the vendors teach similar courses at other sites and charge much more.

Contact:
Department of Personnel Administration
One Ashburton Place, Room 519
Boston, MA 02108
(617) 727-2408

Commonwealth of Massachusetts
Office of Management Information Systems
Bureau of Training

The OMIS Bureau of Training provides specialized and technical training to OMIS employees, Data Center users, and Commonwealth employees who take advantage of the ADP Procurement (AF-29) process. Its courses range from understanding specific blanket contracts to advanced programming. In a typical month, over 25 courses are offered. In addition, more than 15 microcomputer and mainframe based tutorials are available.

Contact:
OMIS Bureau of Training
One Ashburton Place, Room 1601
Boston, MA 02108
(617) 973-0925

Commonwealth of Massachusetts
Office of Management Information Systems
Library

The OMIS Library is open to all state employees. It contains data processing books, periodicals, reference manuals, industry reports, and information on seminars and course offerings. In addition, there are some diskette training tutorials available. The library will also lend its Boston Computer Society membership cards.

Contact:
OMIS Library
One Ashburton Place, Room 1601
Boston, MA 02108
(617) 973-0933

Institute for Governmental Services

The Institute for Governmental Services (IGS) is a linking agency between the University of Massachusetts and state and local government. Institute programs include management training, specific skill training, technical assistance, research, publications, and organizational development. IGS will custom design, coordinate, and conduct training programs for a department. Most activities are supported by a combination of grants, contracts, and participant fees.

Contact:
Institute for Governmental Services
University of Massachusetts Downtown Center
Boston, MA 02125
(617) 542-6558
(413) 545-0001

Mass/TRAIN

Mass/TRAIN is a consortium of data processing trainers within the Commonwealth. Its purpose is to organize those involved in microcomputer, mainframe, and end user systems training and assist with planning, implementation, and evaluation.

Contact:
OMIS Bureau of Training
One Ashburton Place, Room 1601
Boston, MA 02108
(617) 973-0925

Training Policy Considerations

Here follow a number of training policy considerations which managers may wish to review and discuss with the training provider.

Training is an investment which results in increased staff productivity. Training policies should view training as a continuous, ongoing, and progressive effort to maintain and increase staff expertise. Policies should support a training environment that is comprehensive, effective, and customized for the organization.

Training policies may address factors such as the following:

> Aligning training with organizational and employee goals. Training policies should support the development of individual training plans and the building of these plans into the employee review process. Policies should reflect an organization's effort to support employee development and career growth while promoting productive use of microcomputers.
>
> Ensuring that the necessary resources—time and money—are available.
>
> Using internal training resources or external sources. Whether training is conducted by a department's in-house staff or by outside trainers will depend upon factors such as budget, facilities, trained staff, and course content.
>
> Developing an effective and comprehensive curriculum. Courses should include topics such as an overview of microcomputers, how they fit into the organization, and microcomputer skills development.

Customizing course content for the audience. Course content and presentation should be appropriate for the student and his or her reason for participating.

Evaluating course content and instructors. One method of evaluation is to ask attendees to fill out evaluation forms.

Establishing an environment conducive to learning, in which employees have the necessary time to learn and experiment with an application before a deadline is upon them.

Providing hands-on learning experiences. Training should be interactive whenever possible.

Measuring training effectiveness. Training should be beneficial to the individual and to the organization, providing practical skills which will be utilized almost immediately, or at least within 90 days. Trainees should know that training is an important part of their job and should view scheduled training as their "job" for that period of time. Participation should be enforced.

Ongoing reassessment of training programs and needs.

Reinforcing initial enthusiasm. Managers and trainers should capitalize on, and direct, initial enthusiasm for microcomputers and their applications in order to continue the individual's learning process.

Supporting informal learning structures. Training policies should encourage informal support and learning exchanges within the work environment. Informal work sessions and user support groups should occur whenever possible.

Providing support for general questions and application development after the formal training experience.

Providing training for the ongoing maintenance of hardware and data and the security of the data.

Developing management training. Management training should be included in any training program. It is important for managers to understand the role of microcomputers. Such training will help them make informed decisions about procurements, needed support, application development, and control.

Guidelines for the Development of Microcomputer Maintenance Policy

The following guidelines have been developed to help managers deal with the requirements for microcomputer maintenance. The array of maintenance options is so large that some assistance is deemed necessary. In addition, it has become apparent that the planning for and selection of microcomputer maintenance options has become a project truly demanding of the manager's time and talents. With these guidelines we hope to engage the manager's mind and talents in solving the problems of microcomputer maintenance.

[These guidelines will consider a microcomputer Local Area Network (LAN) a microcomputer system if the LAN server is in fact an off-the-shelf microcomputer running some vendor's LAN software. If the LAN server is some dedicated engine not otherwise available as a standard microcomputer, it will be considered more akin to a mini-computer system.]

General Maintenance Understandings

Microcomputer maintenance encompasses several distinct areas. It includes repair and servicing of broken hardware and software. It also includes regularly scheduled preventive maintenance. General office operating policies, such as smoking policies, also impact microcomputer performance. Finally, microcomputer maintenance could include operator training insofar as operator-performed maintenance is involved. In fact, microcomputer maintenance includes all of the above at one time or another.

Mainframe and minicomputer maintenance historically has been performed by the vendor under an on-site contract. Because of the importance of the work which these mainframes and minis are doing, and because of the value of the equipment, the high cost of vendor maintenance often seems worthwhile.

General office machine maintenance plans are similar to those for mainframes and minicomputers; everyone is familiar with the copier maintenance person who makes regular preventive maintenance calls as well as emergency on-site calls. Microcomputer maintenance traditionally operates on a continuum that runs from “cheap equipment - no formal maintenance” to “expensive equipment - formal vendor on-site maintenance.”

Common maintenance options include:

A) On-Site

In this case, a maintenance policy is purchased, often from the equipment vendor, which provides that the vendor will perform all or specified equipment maintenance at the installation site using vendor personnel and equipment. A specific performance time is usually included, such as four-hour response. This response time may only mean that the incident is logged within a specified time. Policies often specify that the vendor will provide a “loaner” unit if they cannot perform the repair within a certain amount of time, such as one business day. This plan is the most expensive option and is most like traditional mainframe and mini maintenance.

B) Depot

Depot or carry-in service usually implies that the maintenance vendor will maintain a local service depot to which the customer must deliver any equipment requiring service. This is much like bringing a home appliance (e.g., TV) in for repair. There can be a contract which provides for all labor and parts, for certain parts and/or labor, or one that requires that payment will be made on a time and materials basis. Clearly there is a lot of latitude in depot maintenance contracts. It should also be noted that when the vendor has established a local depot, a contract for maintenance usually is not mandatory; i.e., if you bring in your broken machine, they will fix it on a time and materials basis.

This option has its drawbacks, for example, the need to transport the equipment to and from the depot. Also, depot service may be slow since the vendor’s on-site repair people are often the same ones who do depot repair but after the on-site calls are done. Thus, depot response may suffer. Finally, if work is not done properly the first time, the user ends up having to transport the equipment to the depot again.

C) In-House

In-house maintenance differs from on-site maintenance because it is not provided by an external vendor. It usually takes the form of one or more trained staff maintenance persons provided with a limited supply of replacement parts (chips, boards, drives, etc.). Often a supply contract is entered into with a local electronics supply source to permit the rapid and cost-effective purchase of needed parts and supplies.

This can be coupled with another vendor-provided solution, mail-in service. Some vendors will enter into a contract which gives special pricing and turnaround terms for broken equipment which is mailed back to them for repair at a remote depot.

In-house maintenance can take the form of very formal "information center" type repair and support facilities to very informal fix-it-yourself. There are negatives associated with either type. If an elaborate in-house repair service is established, it will be expensive both in terms of salaries and equipment and parts. If "fix-it-yourself" is chosen, the broken equipment probably will not get fixed at all. A happy medium is required here. Its definition should not be left to users or repair staff; it is clearly a management chore.

D) None

This option is often the default mode of maintenance. It can be a conscious decision to treat microcomputers as commodities and to replace rather than repair, or it can be the result of a failure to plan at all. Where no maintenance plan is provided, some local housekeeping is nonetheless desirable. Regular cleaning of screens and diskette drives and CPU vacuuming make good preventative sense. This can be done by the operator.

Toward Developing a Maintenance Plan

As you envision the various possible levels of microcomputer maintenance, it becomes apparent that some initial decisions have to be made about microcomputer hardware itself, such as:

What is its envisioned useful life?
Does it make sense to replace rather than repair?
Does the hardware mix include much old equipment?

Where a program of planned acquisition is coupled with a program of planned replacement, little or no maintenance may be required. Vendor guarantees and good housekeeping practices will go a long way toward extending the useful life and lowering maintenance costs.

In other cases, reality may dictate that funding for regular replacement equipment is hard to come by. Under these circumstances it may be easier to acquire more expensive maintenance which will cover the useful life of the equipment. If particularly ancient equipment is already in place, it will be very expensive to maintain. Plans to replace such equipment should have a high priority.

A blanket contract for micro-maintenance services has been issued by the Bureau for Systems Policy and Planning (BSPP file number 1101-5149-7). It provides a range of maintenance options for Commonwealth managers at competitive costs.

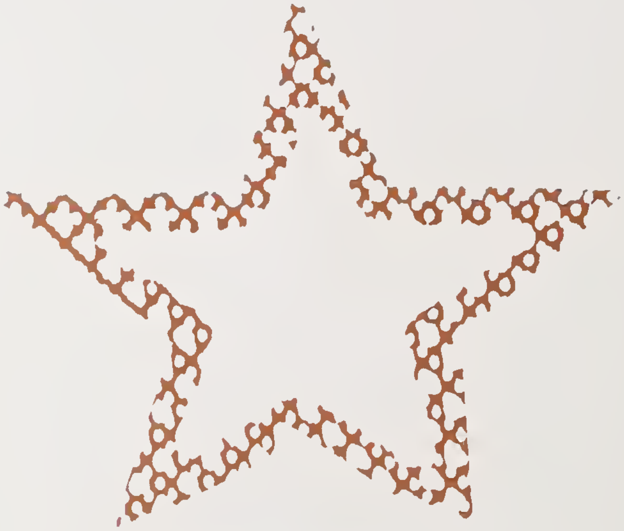
Software may outlive hardware, however. Thus it may make very good sense to contract for ongoing software support (upgrades, etc.) where such is offered. It is especially important to contract for ongoing support in connection with custom-designed packages.

Some Conclusions Regarding Maintenance

The value of the work which the microcomputer system is doing must be assessed. This may be the hardest part of the manager's job, but it is the most important. If the computer is a secretarial word processing station, its principal value lies in the data it stores. The computer itself can be easily replaced. The data will be very hard, if not impossible, to replace unless properly protected. If, on the other hand, the computer is running a departmental database which is accessed by several others on a LAN, then its being out of service has relatively dire consequences. Several people are unable to work, not just one.

As time goes on, the cost of replacement will continue to go down. Microcomputers have become commodities. Peripherals will continue in the same pattern. But, the cost of maintenance will continue to rise because it is based on personal services (labor) and is seen as a high-profit activity by the vendors.

Thus, it would appear that an ideal solution to the maintenance issue in many situations is to maximize replacement and in-house maintenance as strategies. One might reserve vendor supported on-site maintenance for only the most sensitive LAN servers, etc.



Design and Layout by
Spencer Design and
the BSS Publishing Group